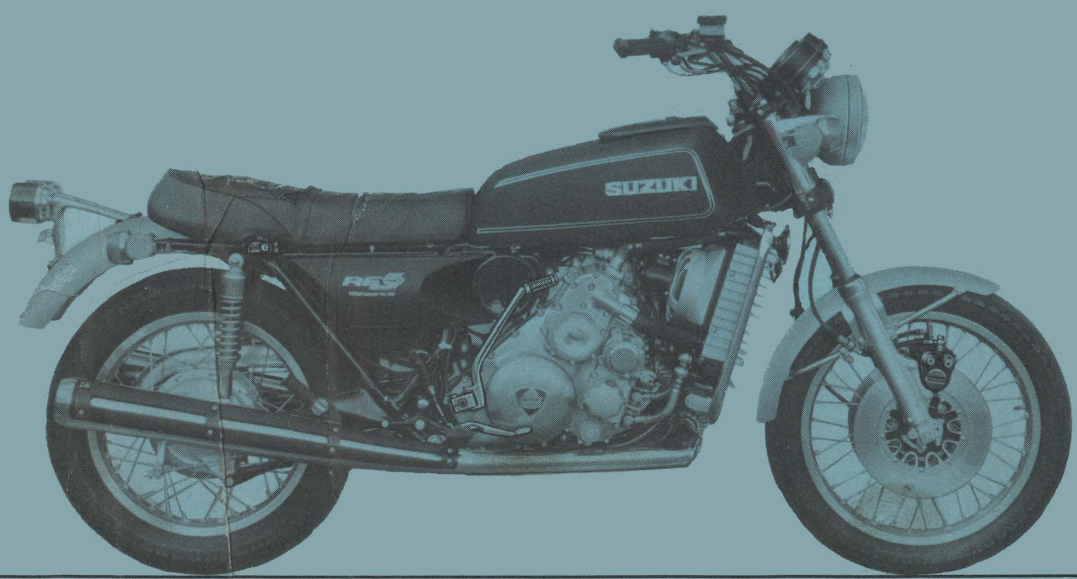
SUZUKI

NEW MODEL
TECHNICAL BULLETIN

SUZUKI

RE5A



INTRODUCTION

This booklet marks the start of marketing the 1976 version of Model RE5 SUZUKI rotary-engine motorcycle. Making a debut as Model RE5A, the new machine now comes in new styling and with a number of design changes.

The changes are described in this booklet intended primarily for use by those charged with the task of promoting the sales of this super-performance motorcycle and of performing servicing attention on the machines of RE model. Please treat this booklet as a supplement to those SUZUKI technical publications already in circulation.

NOTE: Information contained in this booklet is based on the standard specifications of RE5A and RE5. The specific set of specifications for each region or area might differ in minor details, depending on the statutory regulations or climatic conditions.

SUZUKI MOTOR CO., LTD.
Service Department
Overseas Marketing Division

SPECIFICATIONS

MODEL SUZUKI RE5A

DIMENSIONS AND WEIGHT	
Overall length	2,220 mm (87.4 in)
Overall width	870 mm (34.3 in)
Overall height	1,170 mm (46.1 in)
Wheelbase	1,500 mm (59.1 in)
Ground clearance	170 mm (6.7 in)
Dry weight	230 kg (507 lbs)
ENGINE	
Type	NSU-Wankel type rotary piston engine
Number of rotor	1
Capacity	497 cc (30.3 cu.in)
Corrected compression ratio	8.6
Carburetor	MIKUNI 18-32HHD
Air cleaner	Polyurethane foam element
Starter system	Electric and kick
Lubrication system	Forced circulation, wet sump.
TRANSMISSION SYSTEM	
Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down 4-up
Primary reduction	1.652 (38/23)
Final reduction	3.071 (43/14)
Gear ratios, low	2.846 (37/13)
2nd	1.736 (33/19)
3rd	1.363 (30/22)
4th	1.125 (27/24)
top	0.923 (24/26)
Drive chain, size	#630, endless type
number of links	96 links
CHASSIS	
Front suspension	Telescopic, oil dampened
Rear suspension	Swinging arm, oil dampened, spring 5-way adjustable
Steering angle	40° (right & left)
Caster	63°
Trail	108 mm (4.3 in)
Turning radius	2.6 m (8.5 ft)
Front brake	Hydraulic operated, double caliper discs
Rear brake	Mechanical, internal expanding
Front tire size	3.25H19-4PR
Rear tire size	4.00H18-4PR
Front tire pressure	1.75 kg/cm^2 (25 psi) (Normal solo riding)
Rear tire pressure	2.00 kg/cm^2 (28 psi) (Normal solo riding)

ELECTRICAL	
Ignition type	CDI (Condenser Discharge Ignition)
Ignition timing	5° B.T.D.C.
Spark plug	NGK A9EFP
Battery voltage	12V
capacity	30AH
Generator	Three-phase alternator
Fuse	20A
Headlamp	12V 50/40W
Tail/Brake lamp	12V 8/23W (3/32cp)
Turn signal lamp	12V 23W (32cp)
Speedometer lamp	12V 3.4W
Tachometer lamp	12V 3.4W
Neutral indicator lamp	12V 3.4W
High beam indicator lamp	12V 3.4W
Turn signal pilot lamp	12V 1.7W
Fuel level warning lamp	12V 3.4W
Oil tank indicator lamp	12V 3.4W
Oil P indicator lamp	12V 3.4W

CAPACITIES	
Fuel tank including reserve	17.0 lit (4.5/3.7 US/Imp gal)
reserve	5.0 lit (1.3/1.1 US/Imp gal)
Engine oil sump	2.5 lit (5.3/4.4 US/Imp pt)
Metering oil tank	1.7 lit (3.6/3.0 US/Imp pt)
Front fork oil	150 cc (5.1/5.3 US/Imp oz) . . . each leg
Cooling solution	4.5 lit (4.8/4.0 US/Imp qt)
Transmission oil	Oil bath, 1,600 cc (3.4/2.8 US/Imp pt)

CHANGES EMBODIED IN RE5A

VISUAL

The instrument cluster used originally in Model RE5 is replaced by the one that has hitherto been used in Model GT750.

The visual design around the headlamps is changed to present a new frontal appearance. The headlamp housings are chrome-plated and reshaped.

Tail lamp and turn signal lamps too are changed: they are of the same types as those used in Model GT750.

Body painting is either black or blue. Two color choices are provided.

ENGINE AND POWER TRAIN

Improved economy

Some rotary engine details are changed for reduction of oil consumption.

Improved durability

A new drive chain containing grease in hermetically sealed state is used.

Easier servicing

The two-point contactor breaker used in Model RE5 is replaced by a single-point breaker.

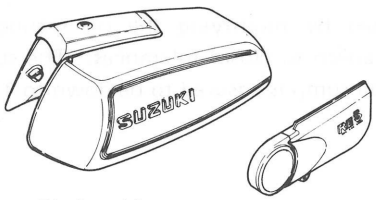
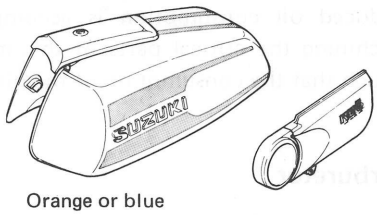
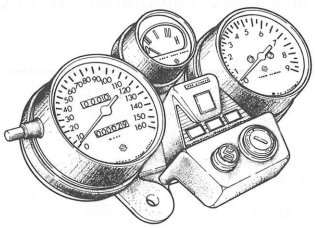
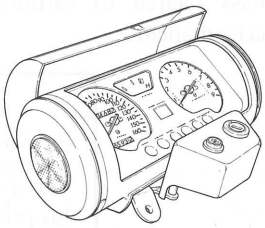
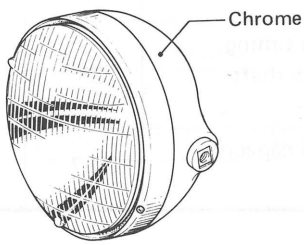
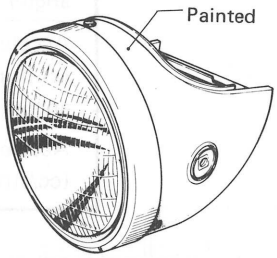
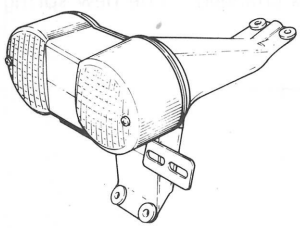
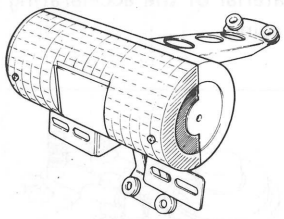
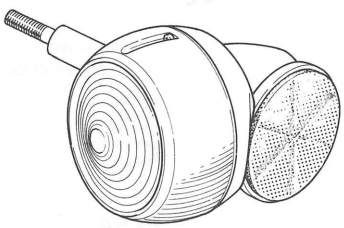
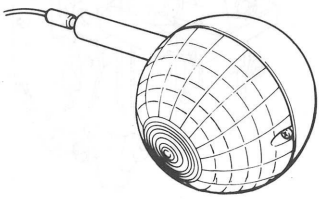
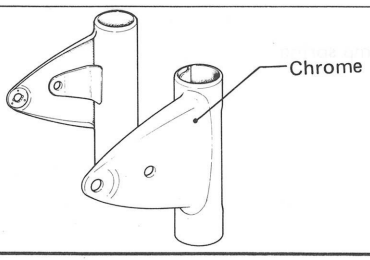
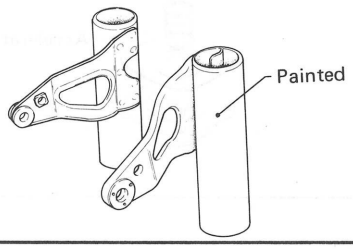
Stable engine performance

The carburetor itself is the same as before but changes are made in the setting of four variables. Provisions are made to thermally isolate the carburetor more effectively. The spark plug too is changed.

All these changes will be described in detail.

DETAILS OF CHANGES

VISUAL

	RE5A	RE5
Fuel tank and frame cover	 Black or blue	 Orange or blue
Instrument cluster		
Head lamp housing		
Tail lamp		
Turn signal lamp		
Head lamp stay		

ENGINE

Engine proper

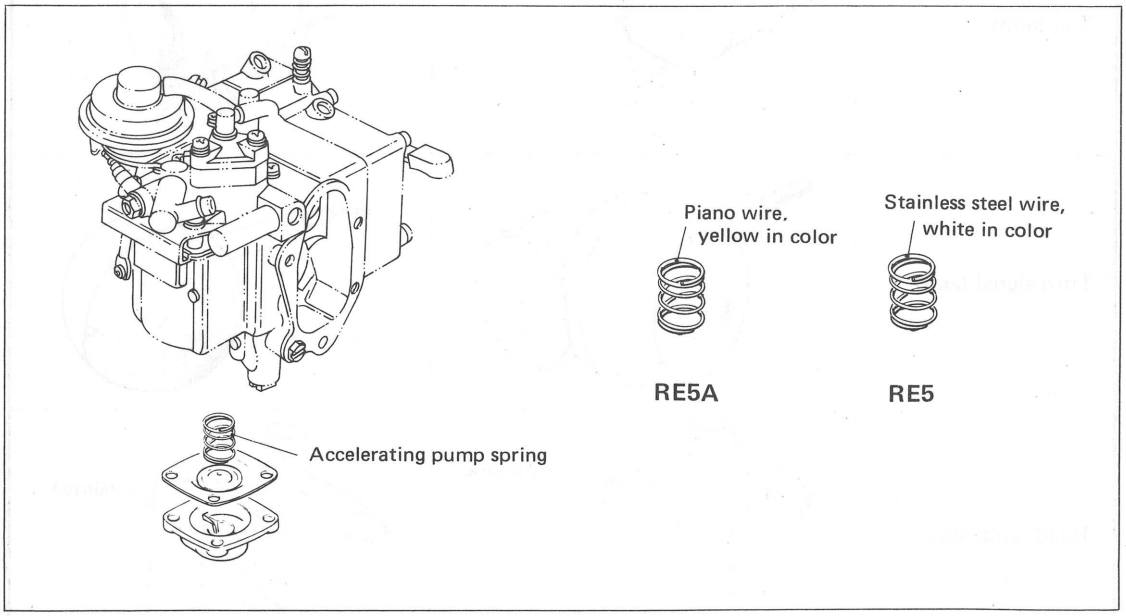
Reduced oil consumption is accomplished by modifying the oil sealing mechanism and also by machining the critical parts of this mechanism to closer tolerances. The success of this modification is such that the consumption of the oil in oil sump is ensured to be down to 1,600 km/litre.

Carburetor

The changes related to carburetor performance are calculated to improve the stability of engine output performance.

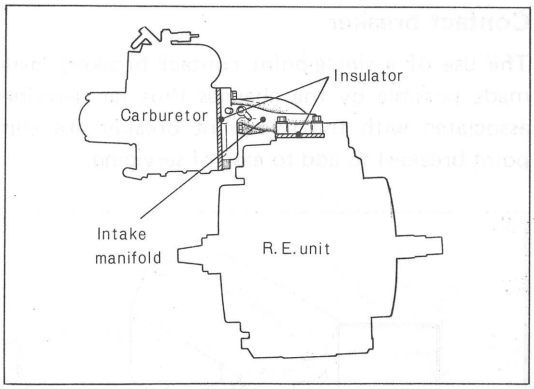
Item	RE5A	RE5
Primary main jet	#87.5	#90
Port valve opening timing (as primary throttle shaft angle)	35°	41°
Accelerating pump timing (as primary throttle shaft angle)	28°	30°
Accelerating pump capacity (cc/stroke)	0.7	0.5

The material of the accelerating pump spring is changed. The new spring is less subject to weakening due to aging.



Intake manifold

The flanged ends of intake manifold are secured to carburetor and to engine through heat-insulating gaskets. This is for preventing carburetion from getting affected by heat of the engine.

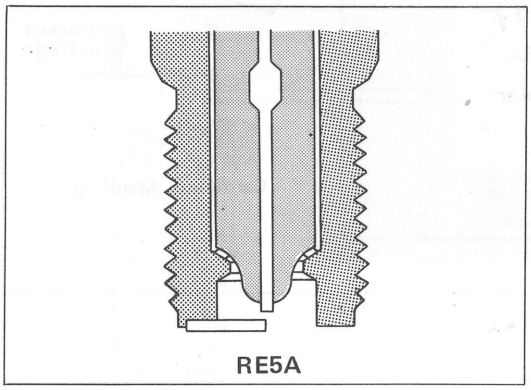


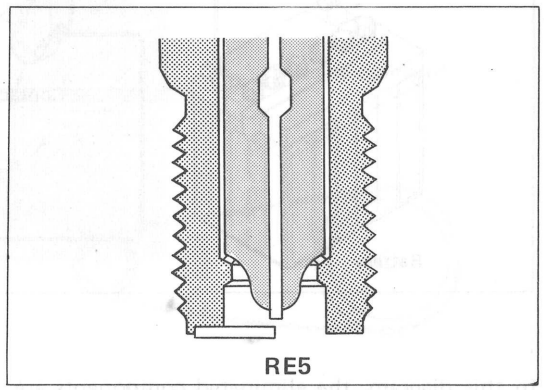
Spark plug

The spark plug is changed from NGK A9EFVP to NGK A9EFP. The new plug is of wide heat band type to eliminate the "wetting" tendency noted in the old model. The electrode design remains the same as before.

Spark plug specification

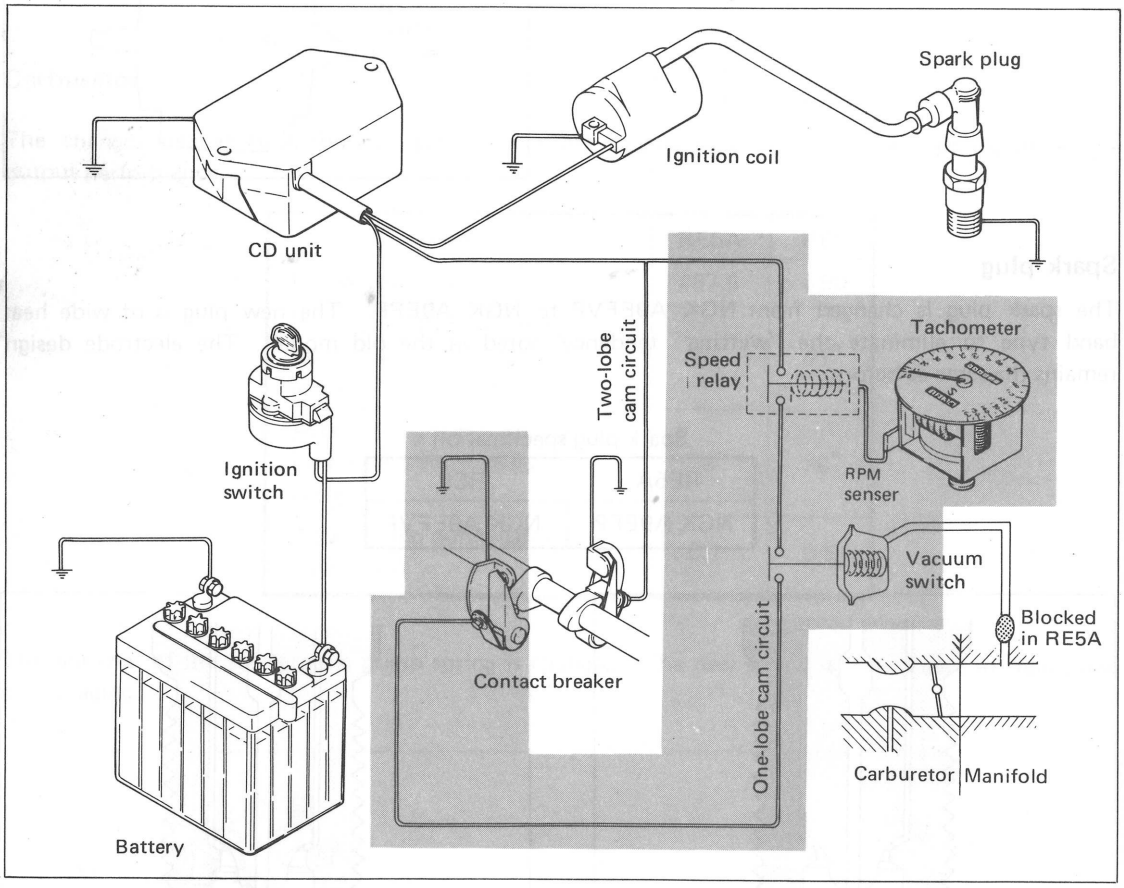
RE5A	RE5
NGK A9EFP	NGK A9EFVP


RE5A

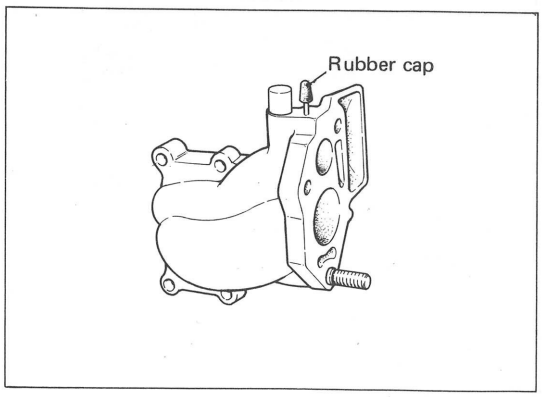

RE5

Contact breaker

The use of a single-point contact breaker, instead of the two-point type of the old model, has been made possible by the changes thus far described. Consequently, the vacuum switch and speed relay associated with the two-point breaker are eliminated (because they are not needed with the one-point breaker) to add to ease of servicing.

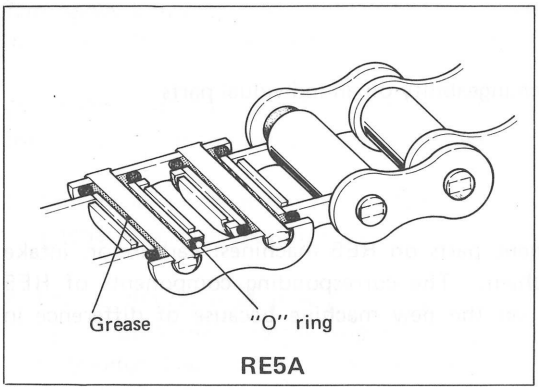


In this diagram, the eliminated components are in the shaded area. It should be noted that the vacuum take-off passage provided in the intake manifold is plugged with a rubber cap.

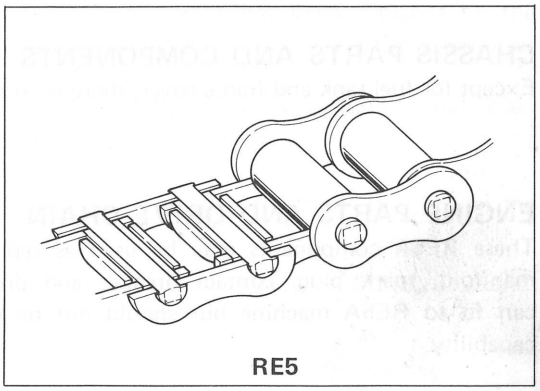


Drive chain

The new drive chain has its link pins lubricated with grease; the grease is contained in the sliding clearance as sealed by "O" rings.

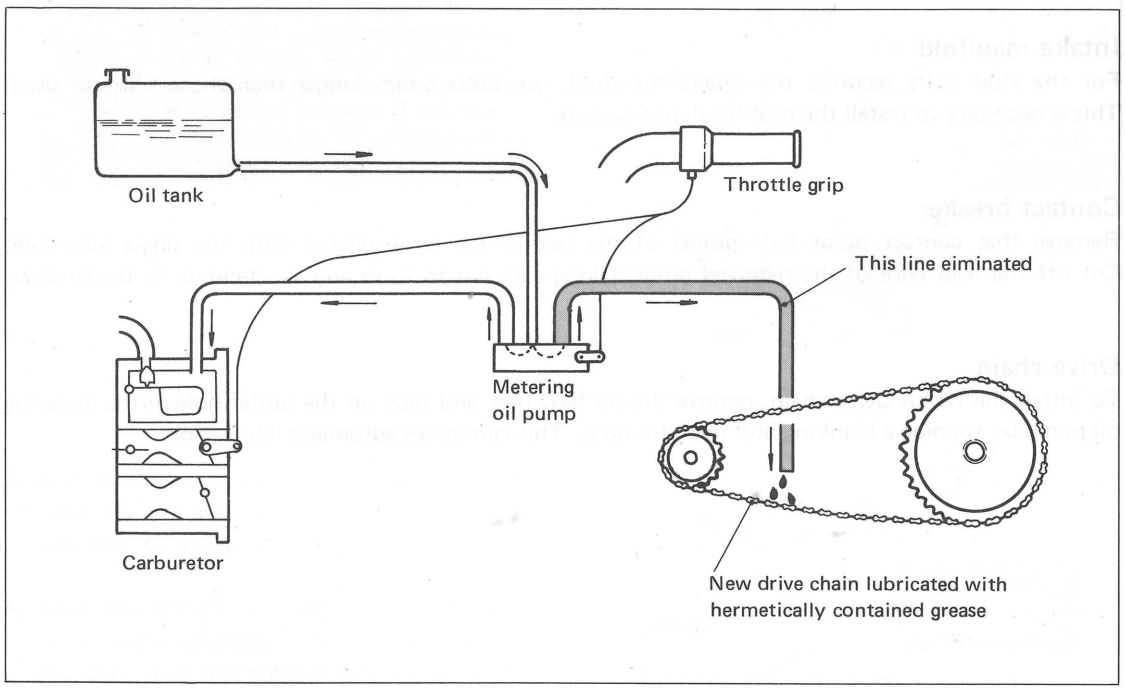


RE5A



RE5

Since the drive chain needs little lubricant supply, the automatic lubrication line of the old mode is eliminated. Consequently, the metering oil pump supplies oil only to the carburetor.



PARTS INTERCHANGEABILITY BETWEEN RE5A AND RE5

The components described in "Details of Changes" are referred to for interchangeability between the two models.

CHASSIS PARTS AND COMPONENTS

Except for fuel tank and frame cover, there is no interchangeability on all individual parts.

ENGINE PARTS AND DRIVE CHAIN

These RE5A components may be used as replacement parts on RE5 machines: carburetor, intake manifold, spark plug, contact breaker and drive chain. The corresponding components of RE5 can fit to RE5A machine but should not be used on the new machine because of difference in capability.

To install the above-enumerated parts of RE5A in the RE5 machine, provisions must be made as follows:

Intake manifold

For the stud bolts securing the intake manifold, use bolts 5-mm longer than those hitherto used. This is necessary to install the heat insulating gaskets.

Contact breaker

Remove that contact point (left point) of the two which is associated with the single lobe cam. Cut off the lead wire of the removed point, taking care not to form any short-circuit in the breaker.

Drive chain

To install the RE5A drive chain, remove the oil feed line, and plug up the outlet hole of the metering oil pump by running a blanking bolt into this hole. This eliminates automatic lubrication.

CARBURETOR

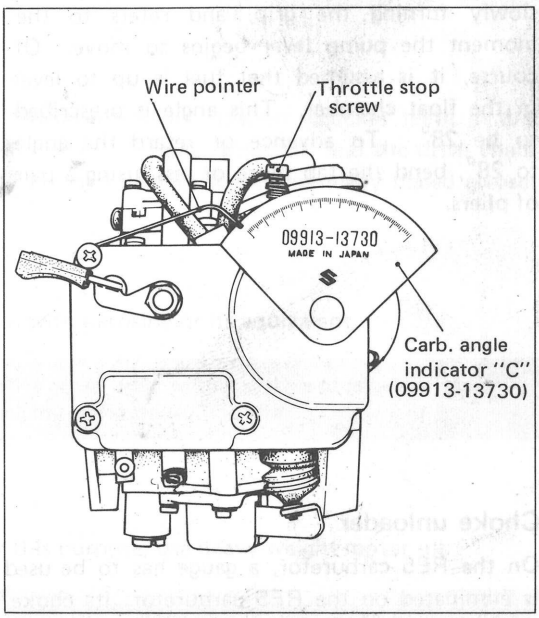
Port valve timing

The angle indicator "A" (09913-13710) used on the RE5 caburetor has been replaced by the indicator "C" (09913-13730); it is permissible to use the indicator "C" on the RE5 carburetor.

The method of adjusting the port valve timing remains essentially the same as before, and is accomplished in the following sequence of steps:

1. Tentatively position the pointer wire on the carburetor body, locating the tip of the wire on the graduated scale of indicator "C".

2. Loosen the cable adjuster all the way. Similarly loosen the throttle stop screw on the carburetor body. This is for allowing the throttle valve (primary) to move to fully closed position.

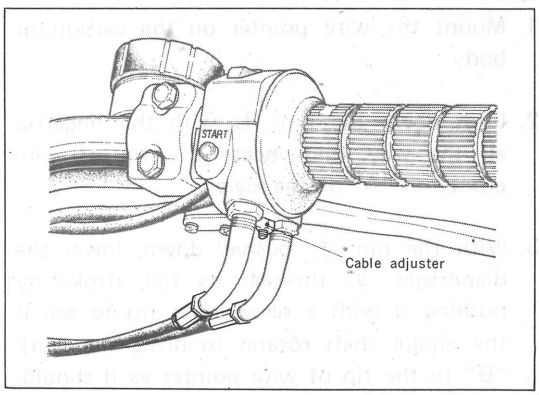


NOTE: **Use a protractor gauge to check whether the primary throttle valve moves to fully closed position or not. The valve has to turn by 82° to come that position. If the valve will not turn by 82°, increase the port valve cable play on pull side.**

3. With the primary throttle valve fully closed, bend the pointer wire to set its tip right over the "O" mark of indicator "C".

4. Twist the throttle grip slowly until the port valve starts opening. At this position of the grip, read the pointer indication on the graduated scale of indicator "C".

5. This reading should be 35°, the specified port valve timing: if so, run in the throttle stop screw for specified idling speed, and adjust the throttle cable to anywhere between 0.5 and 1.0 mm by means of the cable adjuster (at the grip), thus completing the adjustment.

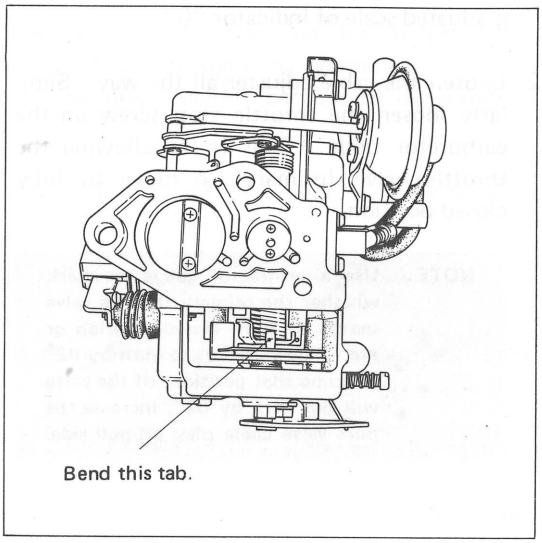


6. If the reading taken is off 35°, vary the play of port valve pull cable or of primary throttle valve pull cable, to bring the angle reading to 35°. The timing is determined by the difference between these two plays.

Accelerating pump timing

With the angle indicator "C" (09913-13730) and pointer wire mounted on the carburetor body as before, check the angle (as referred to the closed position, taken as "O", of primary throttle valve) at which the accelerating pump begins to operate as actuated from the grip.

The angle in question is to be reached by **slowly** opening the primary throttle valve, that is, slowly turning the grip, and refers to the moment the pump lever begins to move. Of course, it is assumed that fuel is up to level in the float chamber. This angle is prescribed to be 28°. To advance or retard the angle to 28°, bend the tab more or less, using a pair of pliers.



Choke unloader

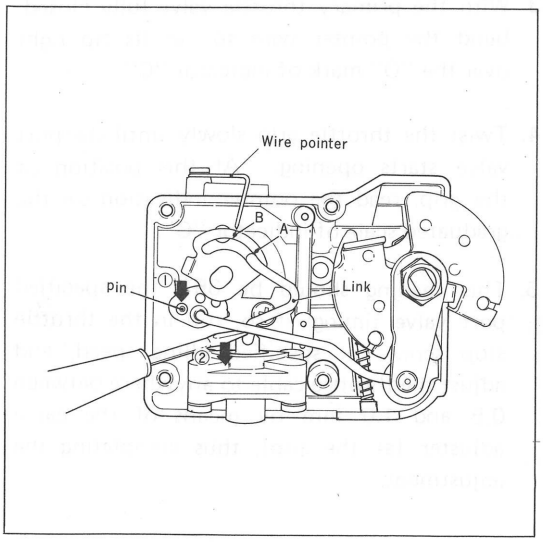
On the RE5 carburetor, a gauge has to be used in checking the choke unloader angle. This practice is eliminated on the RE5 carburetor: its choke unloader angle can be read directly off the scale, as follows:

1. Mount the wire pointer on the carburetor body.

2. Push down the pin ① with the fingertip all the way, and locate the tip of wire pointer at "A" on the scale.

3. With the pin ① pushed down, lower the diaphragm ② through its full stroke by pushing it with a screwdriver tip to see if the choke shaft rotates to bring the mark "B" to the tip of wire pointer as it should.

4. If not, bend the link to coincide mark "B" with the wire pointer.



IGNITION TIMING

Since a single-point contact breaker is used in the RE5A engine, the method of checking and adjusting the ignition timing is similar to that of conventional battery-ignited engines.

The timing dial gauge is not needed. Merely read the crank angle off the graduated timing scale marked on the counterweight at the moment a spark jumps on the spark plug.

Ignition timing specification:	5° B.T.D.C.
Contact gap specification:	0.4 – 0.5 mm (0.016 – 0.020 in)

DRIVE CHAIN

Link pins are lubricated with grease at all times. However, rollers ride on sprocket teeth in dry condition. For this reason, the rollers should be lightly oiled at regular intervals, and the drive chain should be washed clean, now and then, in such a way as **not** to affect the hermetically sealed grease. Here is the method of chain washing and oiling:

Washing

At intervals of 500 km (300 miles), wash the drive chain with kerosine or its equivalent.

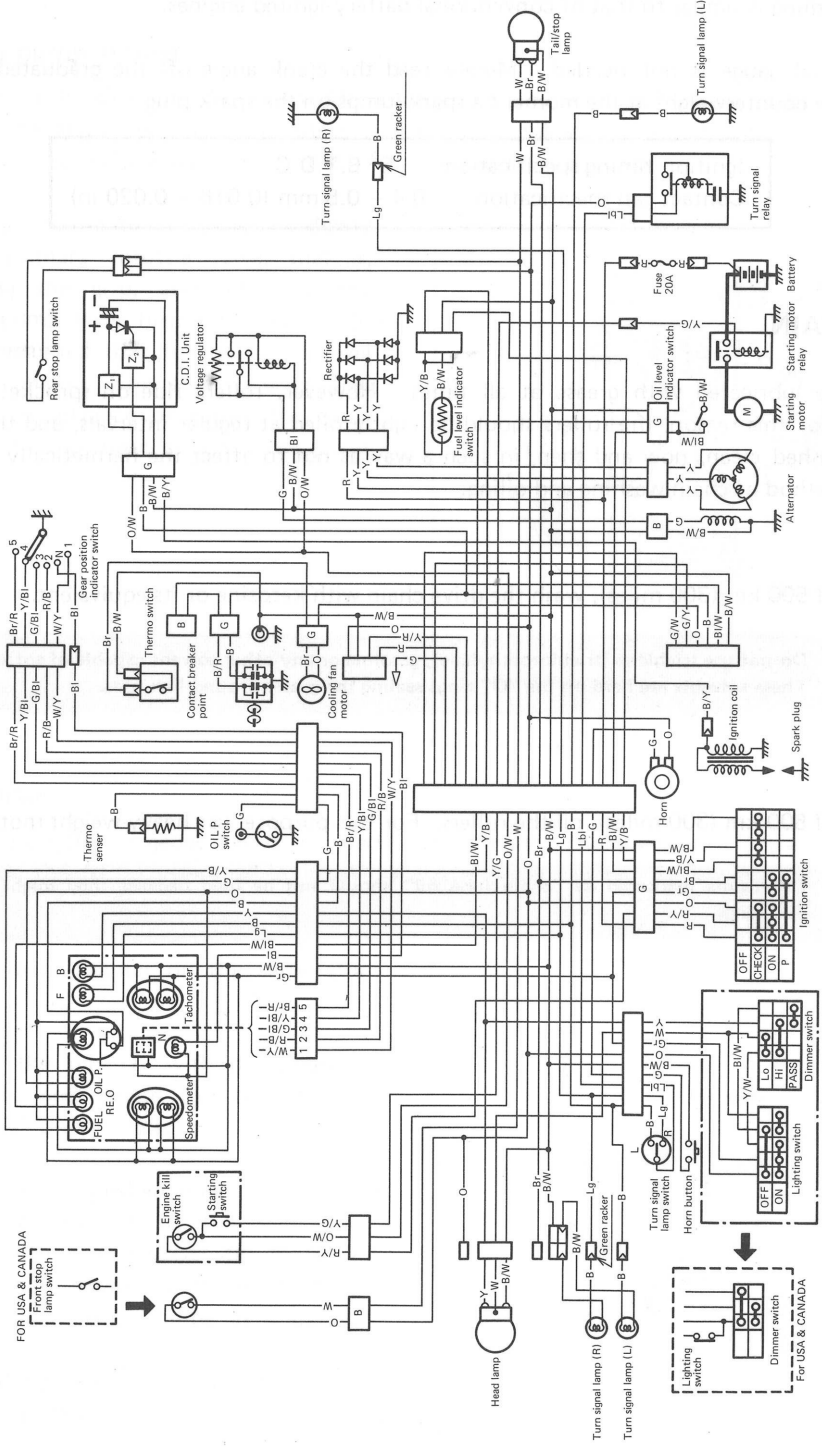
CAUTION: Do not use trichlene (trichloroethylene), gasoline or any other solvent capable of softening rubber. These solvents are hard on the "O" rings sealing the grease around link pins.

Oiling

At intervals of 500 km (300 miles), oil the rollers. For this purpose, use heavy-weight motor oil.

CAUTION: Lubricants marketed as "chain lube oil" should not be used because they might damage the "O" rings.

WIRING DIAGRAM
RE5A



WIRE COLOR

B .....Black
Bl.....Blue
Br .....Brown
G .....Green
Gr .....Gray
O .....Orange
R .....Red
W .....White
Y .....Yellow
Lbl.....Light blue
Lg .....Light Green
B/R .....Black with red tracer
B/W .....Black with white tracer
B/Y .....Black with yellow tracer
Bl/W.....Blue with white tracer
Br/R.....Brown with red tracer
G/Bl.....Green with blue tracer
G/W .....Green with white tracer
G/Y .....Green with yellow tracer
O/W .....Orange with white tracer
R/B .....Red with black tracer
R/Y .....Red with yellow tracer
W/Y .....White with yellow tracer
Y/B .....Yellow with black tracer
Y/Bl.....Yellow with blue tracer
Y/G .....Yellow with green tracer
Y/R .....Yellow with red tracer
Y/W .....Yellow with white tracer

MEMO